

Amendments to the Drawings

The attached sheet of drawings includes changes to Fig. 2. This sheet replaces the original sheet, which contains Figures 2 and 3.

Figure 2 has been amended to remove "Conventional Art".

Attachment: Replacement Sheet

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-26 are now present in this application. Claims 21-26 have been added. Claims 1, 8, 14 and 21 are independent.

The specification and claims have been amended slightly to correct minor informalities and to improve form. These modification do not add new matter.

Drawings

In Figure 2, "Conventional Art" has been removed to provide a consistent disclosure. This is fully supported by the specification, e.g., at page 4, lines 7-8, and page 4, line 19 - page 5, line 14. Accordingly, approval of the drawing changes is respectfully requested.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Regarding independent claims 1, 8 and 14, the Examiner alleges that the phrase "forming one ECC block to perform an error correction on the basis of the one ECC block" is unclear. To clarify the invention, the claims have been amended. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejections Under 35 U.S.C. § 102(e)

Claims 1, 2 8-10 and 14-15 are rejected under 35 U.S.C. § 102(e) as being anticipated by Zook (U.S. Patent No. 6,052,815). This rejection, insofar as it pertains to the presently pending claims, is respectfully traversed.

Regarding all the rejected claims including independent claims 1, 8 and 14, the Examiner merely discusses what Zook teaches. However, the Examiner does not indicate at all how the Examiner is equating the features of Zook to read on each limitation of the independent claims. Thus, the Examiner has not established a prima facie of unpatentability, and the rejection is improper and must be withdrawn.

In the alternative, Zook including Figures 3A and 3B discloses a structure of one conventional ECC block, which is also shown in Applicants' background art Figure 1. In clear contrast, in Applicants' embodied invention, a pair of such data blocks are rearranged and then combined to produce one data block as shown in Figure 5. Particularly, prior to the combining step, for each of the data block $U(i,j)$ and $V(i,j)$ in Figure 4, the rows having the outer parity are selectively inserted into the rows having no outer parities. Then these two data blocks $U(i,j)$ and $V(i,j)$ are combined into one as shown in Figure 5. Then the rows of such combined data block are sequentially recorded onto a data storage medium. This in effect means that the first row of the first data block $U(i,j)$ and the first row of the second data block $V(i,j)$ are sequentially recorded on the medium. Then the second row of the first data block $U(i,j)$ and the second row of the

second data block $V(i,j)$ are sequentially recorded on the medium. Then the third rows of the first and second data blocks are sequentially recorded on the medium. This process is repeated for the rest of the rows of the first and second data blocks. This clearly is different from the manner in which the prior art including Zook records the rows of the data block. In the prior art including Zook, because the pair of data blocks are not combined into one data block, all the rows of the first data block are recorded first on a medium. Then the rows of the second data block are all recorded on the medium.

Therefore, Zook fails to teach or suggest, *inter alia*:

appending outer parity of a predetermined size and inner parity of a predetermined size to each column and row of each of said plurality of data blocks, respectively, thereby forming one ECC (Error Correction Code) block to perform an error correction on the ECC block;

reordering rows including the outer parity so as to insert said rows including the outer parity separately into other rows including no outer parity, for each of said plurality of data blocks in said appending step; and

writing rows in the same order in said plurality of data blocks re-arranged in said reordering step, to the storage medium sequentially on row-by-row basis

as recited in independent claim 1;

appending an outer parity of a predetermined size and an inner parity of a predetermined size to each column and row of each of said plurality of data blocks, respectively, thereby forming one ECC (Error Correction Code) block to perform an error correction on the ECC block

as recited in independent claim 8; and

combining each data unit having the appended

outer parity and inner parity, thereby forming one ECC (Error Correction Code) block to perform an error correction on the ECC block

as recited in independent claim 14.

Accordingly, independent claims 1, 8 and 14 and their dependent claims (due to their dependency) are patentable over the applied reference, and the rejection must be withdrawn.

New Claims

Independent claim 21 and its dependent claims 22-26 contain similar subject matter as claims 1-20 and are thus believed to be allowable based on the same reasons that claims 1-20 are allowable as discussed hereinabove.

Allowable Subject Matter

Since claims 3-7, 11-13 and 16-20 have been amended to overcome the 35 U.S.C. § 112, second paragraph, rejection and such claims were not rejected under any prior art of record, these claims are now in condition for allowance.

Accordingly, indication of allowance of such claims is respectfully requested.

Conclusion

For the foregoing reasons and in view of the above clarifying amendments, Applicants respectfully requests the Examiner to reconsider and withdraw all of the objections and rejections of record, and earnestly solicits an

early issuance of a Notice of Allowance.

The Examiner is respectfully requested to enter this Amendment After Final Rejection, in that it raises no new issues but merely places the claims in a form more clearly patentable over the references of record. In the alternative, the Examiner is respectfully requested to enter this Amendment After Final Rejection in that it reduces the issues for appeal.



Should there be any outstanding matters which need to be resolved in the present application, the Examiner is respectfully requested to contact Esther H. Chong (Registration No. 40,953) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Applicant(s) respectfully petitions under the provisions of 37 C.F.R. § 1.136(a) and 1.17 for a three-month extension of time in which to respond to the Examiner's Office Action. **The Extension of Time Fee in the amount of \$980.00 is being paid with the concurrent filing of a Notice of Appeal.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #40,950
 James T. Eller, Jr., #39,538

P.O. Box 747
Falls Church, Virginia 22040-0747
Telephone: (703) 205-8000

JTE/EHC:lmh

Attachment: One (1) Replacement Drawing Sheet